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INNOVATIONS FOR INSTRUCTIONAL IMPROVEMENT.

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THE CATSKILL AREA PROJECT IN SMALL SCHOOL DESIGN, THE ROCKY MOUNTAIN AREA PROJECT FOR SMALL HIGH SCHOOLS, THE WESTERN STATES SMALL SCHOOLS PROJECT, AND THE TEXAS SMALL SCHOOLS PROJECT ARE DESCRIBED AND COMPARED. FINANCIAL SUPPORT COMPARISONS ARE MADE. METHODS OF IMPROVING INSTRUCTION ARE DIVIDED INTO TEACHER-CENTERED AND ADMINISTRATOR-CENTERED ACTIVITIES. TEACHER-CENTERED ACTIVITIES INCLUDE MULTIPLE CLASSES, TEAM TEACHING, USE OF TEACHER'S AIDES, SHARED SERVICES, MODIFICATION OF FACILITIES, AND THE USE OF PROGRAMED MATERIALS. ADMINISTRATOR-CENTERED ACTIVITIES INCLUDE FLEXIBLE SCHEDULING, USE OF SPECIAL MATERIALS, INSERVICE TRAINING, NONGRADING PROCEDURES, TECHNOLOGICAL DEVELOPMENTS, AND CURRICULAR CHANGES. IMPLICATIONS FOR CHANGE LISTED ARE (1) A REGIONAL CONCEPT OF PROJECTS, (2) CENTRALIZED FINANCIAL ASSISTANCE, (3) CONCENTRATION IN SPECIFIC AREAS BY A PROJECT, (4) SOUND FINANCING AND ORGANIZATION, (5) LIMITED MEMBERSHIP PER PROJECT, AND (6) COOPERATION WITH STATE DEPARTMENTS OF EDUCATION FOR IMPROVEMENT OF THESE PROJECTS. A BIBLIOGRAPHY IS INCLUDED. (FS)

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Innovations for Instructional Improvement

A REPORT TO

FUND FOR THE ADVANCEMENT OF EDUCATION —
THE EXPERIMENTAL ARM OF THE FORD FOUNDATION

FROM

UPPER MIDWEST SMALL SCHOOLS PROJECT

UPPER MIDWEST SMALL SCHOOLS PROJECT
College of Education
University of North Dakota
Grand Forks, North Dakota 58201

September, 1965

RC 000 200

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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INTRODUCTION

During the 1964 summer session, the College of Education of the University of North Dakota sponsored a four-week workshop devoted to investigating some solutions to the problems that plague small schools. Out of that workshop came the Upper Midwest Small Schools Project, a voluntary group of small schools banded together in a mutual concern for the improvement of the educational programs in small schools. The UMSSP was patterned after similar projects in the United States, and is governed by a five-man board elected by member schools. These schools have agreed to investigate any suitable method through which instructional programs can be improved, and to assist in the evaluation of these methods in their schools.

During the 1964-65 school year, the Fund for the Advancement of Education, the experimental arm of the Ford Foundation, awarded to the UMSSP a travel grant. The grant permitted visits to schools across the nation. Data was collected from schools that have gained attention through their educational innovations. A major purpose of the grant was to investigate the applicability of techniques developed in visited projects and schools to the solution of problems facing educators in the Upper Midwest region. These visits were made during the Spring semester, 1964-65, and were attended by administrators of member schools, state department and school board officials, along with some university personnel. This report summarizes three major area projects, a summary not found elsewhere. Included also

is a bibliography of the reports of all projects in all areas. This is the first time such a bibliography has been compiled.

To acknowledge all those who have assisted is to list all participants and friends of the UMSSP; a few persons, however, should be given a special "thanks" for their help. -- To Dr. Elbie Gann, Asst. Commissioner of Education, State of Colorado, and Mr. Ralph Bohrson, Coordinator of the Western States Small Schools Project, the two guest lecturers for the first small schools workshop at the University of North Dakota, who guided the UMSSP into its formative stage; to Mr. Charles Halbert, Superintendent of Schools at Riverdale, North Dakota, and the first chairman of the board for UMSSP; to State Superintendent M. F. Peterson for his support to the project and for his participation through membership on the board; to Dr. Frank Cyr, Columbia University, for his encouragement and assistance in planning the workshops; to Dr. Lewis Tamblyn, Department of Rural Education, NEA, for his help in the second annual small schools workshop; and to Mr. Richard K. Klein, Assistant Superintendent of Public Institutions, for his assistance in the workshops, his visit to the Western States Small Schools Project, and for responding to the many requests made to his office for data. Special recognition should also be given to Dr. Glen I. Earthman, Coordinator of Elementary Education, and Dr. Chester A. Hausken, Director of the Bureau of Educational Research and Services, who have generously given of their time to assist in the travels, compilation of data, and in the preparation of this report.

We wish to express our gratitude to Mr. Charles Bitters, Director of the Texas Small Schools Project, Dr. James Sampson, Executive Secretary of the Catskill Area School Study Council, and Mr. Paul Nachtigal, Director of the Colorado project. The expert preparation and guidance of these directors made our visits to their respective states especially meaningful. We extend our thanks to the 38 superintendents and principals of the visited schools for guiding us through the wonderful new world of innovations in public education.

M. L. Cushman

A. W. Sturges

METHODS OF IMPROVING INSTRUCTION-GROUP ACTION

One of the first attempts by a group to search for ways to improve instruction was that of the Catskill Area Project in Small School Design. An outgrowth of a voluntary group known as the Catskill Area School Study Council, the CAPSSD began in 1957 with a grant from the Ford Foundation. The grant enabled member schools to explore a number of techniques, each school exploring those techniques considered particularly apropos to its needs and the Project acting primarily as an information and assistance center.

Member schools were thirteen-year schools ranging in enrollment from 250 to 1100 pupils, located in a tri-county area of Delaware, Otsego, and Chenango counties. A meeting to explore the use of correspondence courses as possible enrichment materials for students was expanded to involve an action research project whose overall aim was the exploration of several feasible ways of improving the educational programs in small schools. Those areas of study selected were supervised correspondence study, multiple classes, flexible scheduling, the expanded use of technological communication, school aides, seminars for able and ambitious high school students, and shared services. The Project group explored all of these areas and though the active financing of these techniques has stopped, many of the practices are still in use in the schools to this date.

The CAPSSD was financed from 1957-1961 by a grant from the Fund for the Advancement of Education and by local board of education support. The Project was able to enlist additional assistance from a wide geographic area in the form of consultants from the State Education Department, from universities, and from industry and agriculture.

Since the expiration of Fund money the Project has reverted to an organizational structure similar to that of the original CASSC and is financed by a greatly expanded local support by the boards of education.

The council has organized five large bi-monthly meetings for all teachers and administrators. These meetings are to explore the solutions to mutually identified programs and to exchange information. In alternate months, local, in-service meetings of teachers are sponsored by some schools. Special purpose meetings are organized to view new materials, hear discussions from guest speakers on important topics and/or decide on action on problems which arise.

An expanded program for high school students at the local College in both the winter and summer session has taken place. In effect, since the expiration of outside funds more reliance has been placed on local support and the use of college personnel as consultants.

The Rocky Mountain Area Project for Small High Schools began in 1957, with the financial support of the Ford Foundation. Between 1957 and 1961, attention was given to the development, use and evaluation of materials

and methods that could be used to advantage in small schools. Areas of investigation included multiple classes, correspondence courses, use of community resources, flexible scheduling, youth seminars and the Encyclopedia Britannica films in chemistry and physics. Annual workshops for teachers in member schools afforded the opportunity to explore the common philosophy of the project with individual schools and to permit teachers to meet and work with consultants assembled for the workshops.

The Western States Small Schools Project is an expansion of a regional search for new techniques to improve instruction. Supported by the Ford Foundation, the WSSSP, between 1962 and August 31, 1965, (the project will continue for three additional years) directed their energies toward the use of self-instructional materials as well as examining continual progress, teacher education, flexible scheduling, enrichment programs, more efficient staff utilization and guidance programs.

Each state selected a director for the project which was coordinated through a central office. A policy board for the WSSSP consisted of the chief school officer in each of the member states (Colorado, Arizona, Utah, New Mexico, and Nevada).

The Texas Small Schools Project was initiated in 1959 as a joint endeavor of the Texas Education Agency and the Texas Small Schools Association which made the preliminary plans for the project during 1959 and 1960. Schools were invited to submit applications and an initial

eighteen schools were selected for membership in the TSSP. This has grown to include currently 149 schools divided into twelve regions. The TSSP is financed through the Texas Education Agency and local school support, with no additional money available.

All projects had as their primary purpose the improvement of the instructional programs in small schools. Experimentation was encouraged at the local level, with direction, coordination, and the dissemination of information through some central office. A basic similarity among techniques being investigated was the individualizing of instruction. Media by which this purpose was accomplished varied from school to school within all projects. For example, all projects looked at programed instruction, correspondence courses, multiple classes, flexible scheduling, the increased use of audio-visual materials, use of technological developments (especially the amplified telephone) and in-service education. Although less vocal and direct recognition to the latter was given, all projects spent considerable time in workshops for teachers, either annually as in the WSSSP, regionally as in the CAP, or combinations of annual and regional meetings as in the TSSP.

A basic difference among the projects is the method of financing their endeavors. The CAP, RMAP, and WSSSP were given considerable financial assistance from the Ford Foundation, but also were called upon for increased local financial support. This combined financing allowed the opportunity for the increased use of consultants from out of the project area,

and permitted school staffs to visit selected schools and teachers. The TSSP is funded by the state, which increases the involvement of Texas teachers in workshops as consultants and workshop leaders. Perhaps this involvement, in turn, taxes the ingenuity of the teachers in adapting developments to local systems with a limited amount of financial outlay. It appears that the influence of financial assistance from outside the district has given impetus to change, and the improvements in the instructional programs have continued after the financial assistance has been terminated.

METHODS OF IMPROVING INSTRUCTION – II

There are as many ways to improve instruction as there are creative teachers to identify and modify methods. Good teachers have always searched for ways to individualize the instructional program; the mushrooming advent of materials and technological developments increase the possibility of preparing a program specifically for a student and also increases the number of decisions a teacher must continue to make in assuring suitable content and methods for a particular student at a particular time.

The many methods of improving instruction observed by the visiting teams may be grouped in twelve general areas. It should be emphasized that these methods have been grouped in this manner for ease of discussion, but should be employed in whatever combination necessary for the best instructional program.

It should also be emphasized that some methods of improving instruction can be instigated by an individual teacher (or teachers) without special administrative action; other methods need special assistance and approval from the administration for their success. Consequently, these six activities that are primarily teacher-centered are presented first; the last six activities listed are administrator-centered. The following information is based on accumulated information from schools listed in Appendix A.

Teacher-Centered Activities

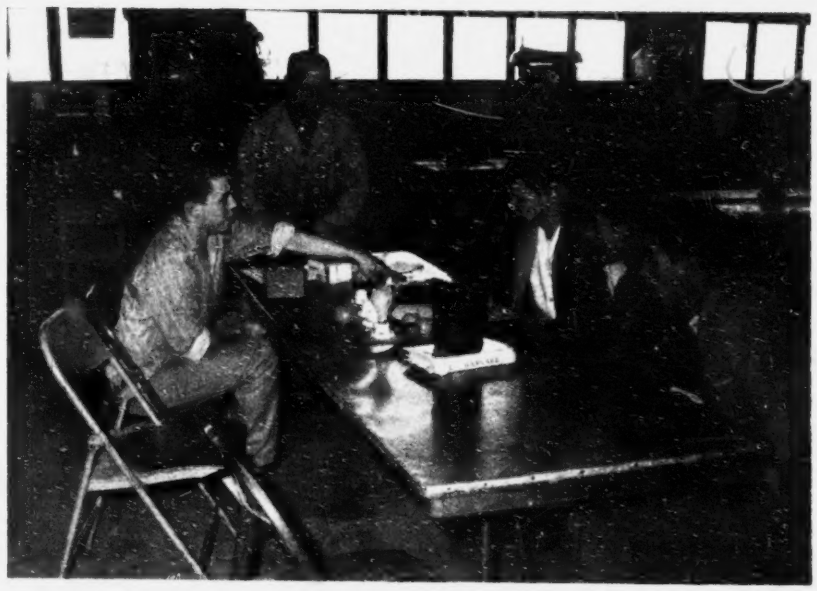
1. Multiple Classes — A multiple class situation is one in which more than one subject is being offered at the same time by the same teacher. General agreement seems to indicate that a teacher should voluntarily accept such an arrangement, should have a reduced load to permit time for the increased amount of preparation, the subjects should be in the same subject area and a teacher should not have more than one period of multiple classes per day each year.

The use of multiple classes is primarily to increase the number of course offerings available to students. In one Texas school, as many as four classes in mathematics were being offered at the same time through the ingenious use of aids and special room arrangement.

A major disadvantage was the lack of special assitance and preparation time available to the teacher. Because the classes are concentrated into a one-period interval, the amount of material necessary is also concentrated from several periods to one. Usually, the amount of preparation necessary to teach multiple classes is more than the amount ordinarily associated with the normal teacher load because of the decreased time in which the classes are taught. Because of the amount of content to be presented in a short interval of time, the teacher must put increased reliance on aids and materials. Multiple classes have done a great deal in helping develop independent study habits on the part of the student.

Multiple Classes

A Schenevus, New York, Business Education class in bookkeeping and shorthand. Earphone outlets are mounted under blackboard for teacher-prepared tapes.



A two-grade level class in electricity and electronics in a CASSC school.

An Algebra II [illegible] using tapes and materials prepared by the teacher as part of an Alg[illegible] I-II multiple class, in the Texas Small Schools Project.

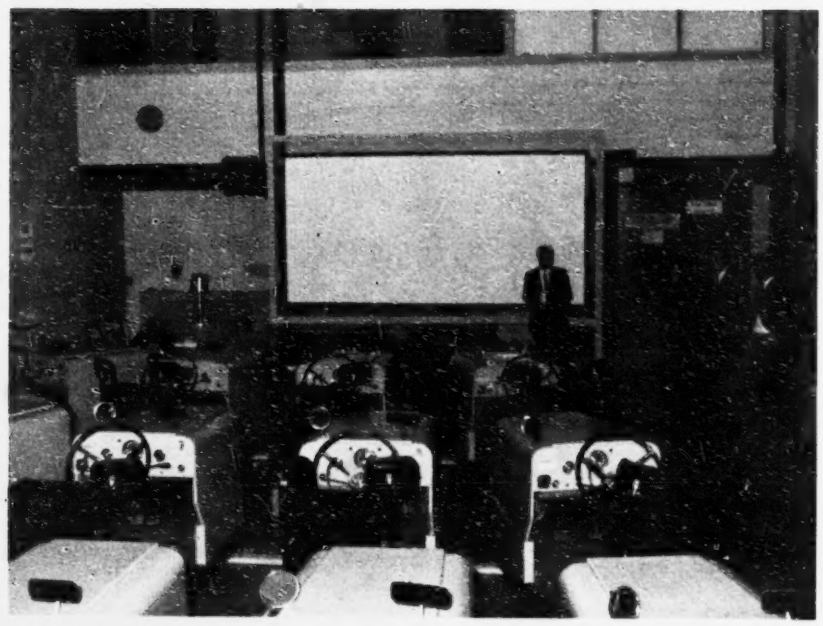
ILLUSTRATION #1

2. Team Teaching -- This can be defined as a teaching technique by which a group of teachers cooperate formally or informally in the planning, preparing, teaching and evaluating of the instructional program for a large group of students. A team approach infers cooperative group action in the selection of content, presentation of the content, and the evaluation of the presentations and the learning of the students. It also infers that the team is in the classroom at the same time. Formalized team teaching does not mean only a sharing of ideas among teachers with teachers "guest lecturing" in a class.

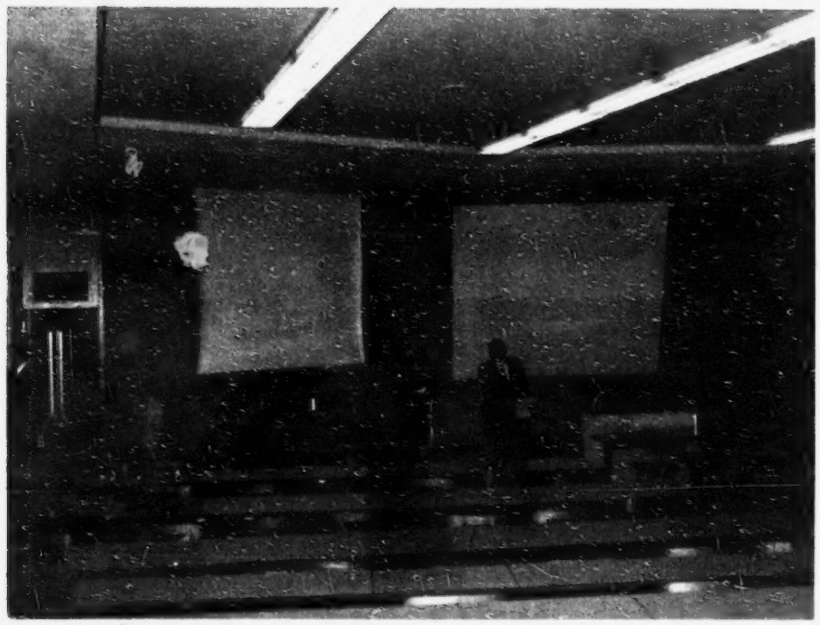
The apparent advantages of team teaching lie in the "multiple-mind" approach to a subject area. This technique was found in most subject areas, but more often in the academic subjects. The size of the teams ranged from two teachers with no additional assistance or reduced load to those teams that included a number of assistants and reduced teaching load for team teachers. The wide definition of "team teaching" accepted by teachers and administrators is illustrated by the number of techniques being used by groups of teachers. Seemingly, each school system modified the principle for their own purpose.

True team teaching, with the necessary supporting staff and materials, does not seem to be feasible for use in small schools because of cost. The principle, however, is usable and was found in many schools. Active interest in this technique was found: teachers were voluntarily using some form of team teaching in an almost unending variety of modifications.

Team Teaching



Large group instruction in driver education.



Large-lecture auditorium in Evanston, Illinois, for team teaching.

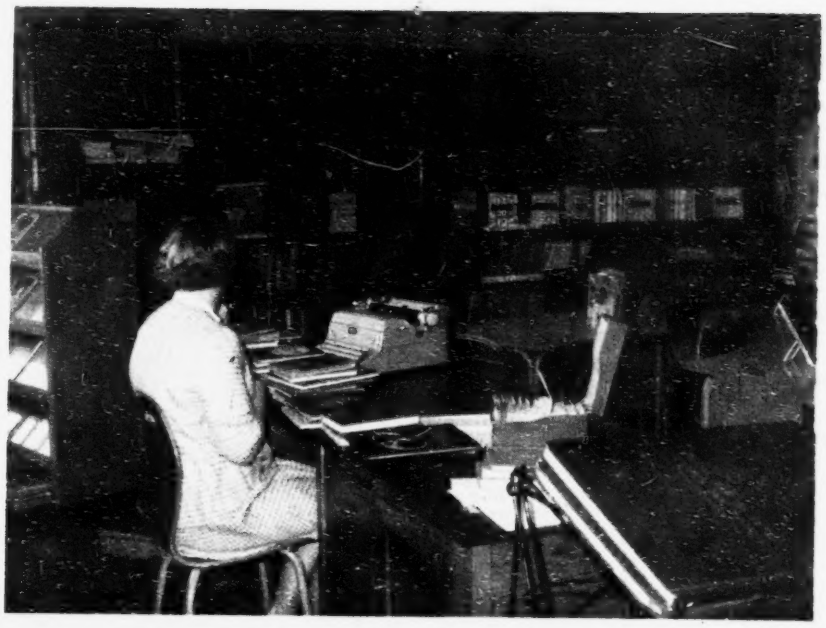
3. Teachers' Aides — The use of non-teaching personnel was found in all parts of the country visited. Their duties were in almost every area but their purpose was to free teachers from non-teaching duties. As in many other techniques for improvement, a uniform definition of an aide's duties was not found; typical of their duties were attendance accounting, lunch supervision, secretarial duties of duplicating, distributing, recording and filing materials, preparing audio-visual equipment for use by the teacher and assisting in the distribution of library materials. Payments for service ranged from an hourly rate of about $1.00 to a yearly contract of about $3600.00. The aides, recruited from local communities, did not all have a training program. Some aides had received their training informally through contact with administrators and teachers; others attended special training sessions and in-service conferences throughout the school year.

Two major advantages seemed present in those school systems using aides. First, aides freed teachers from non-teaching duties, thus permitting them more time to do that for which they are best qualified. Secondly, and most important, was the morale factor apparent among the teachers who had the assistance of an aide. Frequently and voluntarily, teachers expressed the appreciation for the help aides were giving. Administrators mentioned the positive affect aides had on the morale of their staff.

The use of teachers' aides seems to be a sensible answer to the problem of expecting teachers to efficiently do all the non-teaching duties and still do an acceptable job in the classroom. The use of teachers' aides

Teachers' Aides

A teacher-aide assisting in the library in Grand Gorge, New York.



A teacher-aide assisting in cataloguing in Meeker, Colorado.

A Laurens, New York kindergarten with a teacher-aide.

appears to be applicable to all school systems in some form or another.

4. Shared Services — The employment of a person by more than one school system in either an instructional or non-instructional position was found most extensively, but not exclusively, in New York schools.

Shared services enable small schools to have access to a staff seldom found in other than the largest schools. Administrative costs of the program are shared among member schools, determined by the ability of the school system to pay. If a school wishes to have a teacher more than two-thirds of her full time, that school probably needs a full-time person. Final approval goes from the Board of Cooperative Educational Services to the state department for final approval. In one county in New York, nine schools working through a cooperative board have 37 full-time shared service teachers that work among the member schools.

Salaries and tenure benefits were given to shared teachers in the same manner as regular teachers. Teachers assigned to work with two schools, for example, must select one of the towns that will serve as home base. Mileage is paid and equipment used by the teacher is provided by the cooperative board; that used by students is paid for by the school. One school with 14 full-time staff members had 9 cooperating teachers including a psychologist, guidance counselor, and dental hygienist.

This procedure seemed to be an excellent technique to augment the staff of a small school. Administered by a lay board, the program has

Shared Services

A guidance counselor in Franklin, New York, who also works with another school in a neighboring town.

A music teacher in Grand Gorge, New York, as part of their shared service program.

Elementary Physical Education being taught in Franklin, New York, by a shared service teacher.

ILLUSTRATION #4

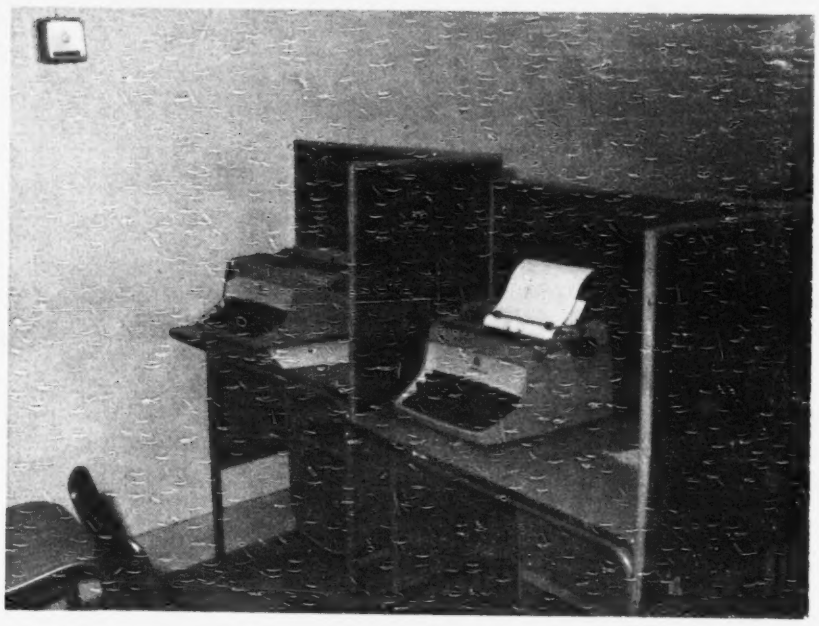
the financial and administrative assistance of the state department of education as well as that of member schools. The additional financial support of the state makes such a program more acceptable to a small school with limited financial resources. Again, direction of a board that has the financial resources and the state department assistance seems to increase the success and workability of such a program.

Shared services were also found in other parts of the country, but not on such a large scale. More typically, two schools were sharing the expenses of a teacher who divided his time equally between the two schools; employment of this teacher was usually on a year-to-year basis, determined on the need of the particular community.

5. Modification of Facilities — Considerable ingenuity was visible in modifying facilities. Modifications included construction of carrels from tables and pegboard, building mobile carts for tape recorders and storage, and remodeling two small rooms into one large multiple purpose laboratory. Panguitch, Utah, is modifying an old gymnasium into a "learning barn" by installing carpeting and work tables for students. The ceiling can be lowered in certain sections to increase its sound absorption, thus, permitting small groups to work without disturbing others. Already one of the most popular spots for learning in the school system, the "learning barn" seemed to be enthusiastically received by students and teachers alike.

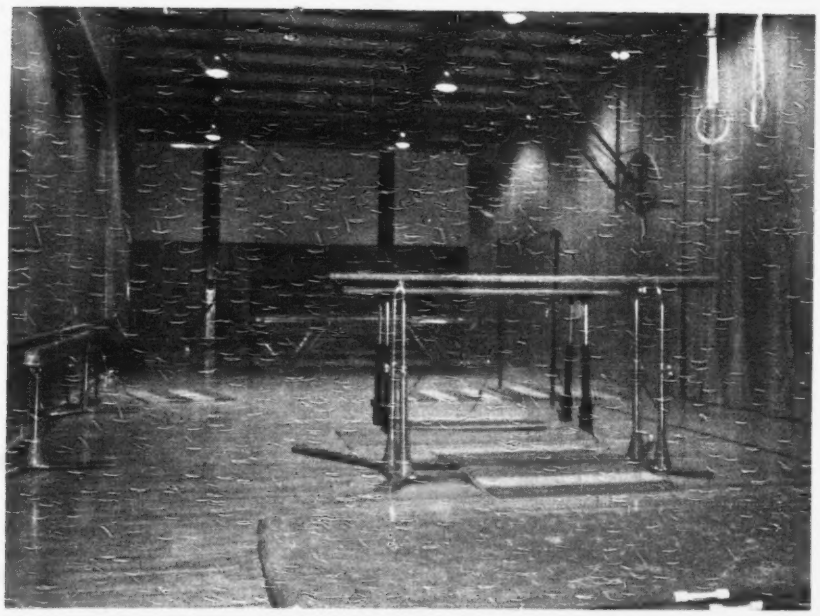
Modifications most often originated with teachers and were built by school carpenters and custodians. One administrator said it was much

Modification of Facilities



Individual carrels made for use in the Resource Center, Mesquite, Nevada.

Carrels folded against the wall and showing the tape recorder speaker outlets and book rack.



The Rich Township gymnasium showing the method of dividing the room with curtains for use of several classes at once.

easier to modify an old building than a new one, since there was less hesitancy by the board to approve such construction in a building approaching its final use.

Modified facilities impressed the teams as being a visible indication of change that usually indicated a changed attitude among the teachers. A teacher who is permitted (or encouraged) by the administrator to request modification of facilities must first have considered new ways to present information; this then leads to changes in the curricular program with the evaluation of the suitability of the modifications. The attitudes of these teachers usually were more enthusiastic, searching, and inquiring than were those of teachers whose schools did not encourage or permit modifications. Administrators who encourage this searching were the key to its success.

6. Programed Materials — These materials were used in many schools to augment existing programs, and were found most often in general academic areas. Some teaching "machines" were found, and a limited range of different programed materials were represented. Students were usually supervised by teachers in the subject area. They often worked on programed material in a class of the same subject area during a "free" period. Programed material was used most often for a course not offered by the school, however, in some instances students were using this method to repeat courses they had failed.

Problems of student motivation seemed to be the most frequently mentioned concern of teachers. They generally reported that students needed supervision to encourage them to continue the course. The type of program which did not vary between class instruction and programed materials was

Programed Materials

Students in several schools were scheduled to work on programed material during specific time periods each day.

Students are able to work in several subject areas by using programed materials.

ILLUSTRATION #6

found by the students to lack interest for them.

Programed materials seemed to be a worthwhile addition to a school program, but required variation, good supervision, and the association with similar classes taught by a teacher.

Administrator-Centered Activities

7. Flexible Scheduling — Probably no other part of the school administrative program restricts the learning of students and the creativity of teachers than does the schedule. Wherever creative and enthusiastic teachers were found, attempts were being made to remove the restrictions and still meet accrediting requirements. Floating periods, rotating schedules, periods of varying lengths, are probably the more popular methods being employed. A few schools are exploring modular scheduling, which markedly increases the flexibility of the program but also requires so many decisions that a computor is considered necessary in most instances. Mesquite, Nevada, uses 30 minute-15 student modules that has been used since 1963, and seems to be a regular part of the instructional program widely accepted by students and staff. This type of schedule seems to allow some teachers to maintain a rather traditional program and permits other teachers to explore new methods of instruction. Similarly, some students were able to be scheduled in a traditional program; others were given considerable flexibility in their assigned and unassigned periods.

Modular scheduling seems to have caught the attention of administrators particularly, and many expressed interest in exploring some way to

Flexible Scheduling

Mr. Allen, principal at Mesquite, Nevada, explains to the visiting team the modular schedule being used in the high school.

M	T	W	Th	F
6	1	1	1	1
2	6	2	2	2
3	3	6	3	3
4	4	4	6	4
5	5	5	5	Activity

A rotating schedule similar to the above was used in several schools. Classes scheduled for the periods indicated one through six meet 4 days a week as indicated. The activity period can be placed wherever needed during the week, and can be used to provide time for in-service. Periods are usually about 70 minutes in length.

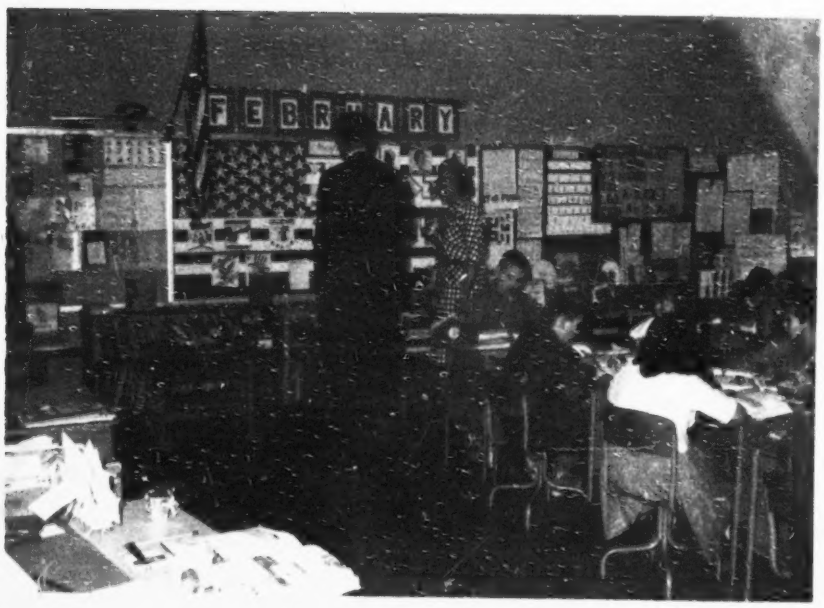
ILLUSTRATION #7

incorporate this technique in their school. The lack of technical assistance was the greatest deterrent. Minnetonka, Minnesota, has attempted to use 13 minute-10 student modules, but lack the assistance of a computor and technical advice. Currently a beginning has been made to provide modular scheduling for the junior high school in some academic areas, using the 20 minute-10 student modules. Meeker, Colorado, following a summer of preparation and assistance, has modular scheduling in operation for the 1965-66 school year.

There seems to be no shortage of printed information explaining and describing new methods of scheduling; the popularity of this subject is attested to at principals' meetings and in various publications. Although some assistance is now available from commercial agencies and universities, technical assistance of computers is greatly lacking. The greatest deterrents to increased flexibility in the schedule are the lack of on-the-job assistance to the principal and accrediting regulations that insist students spend a certain minimum number of minutes per week, or a certain number of days, in a particular class.

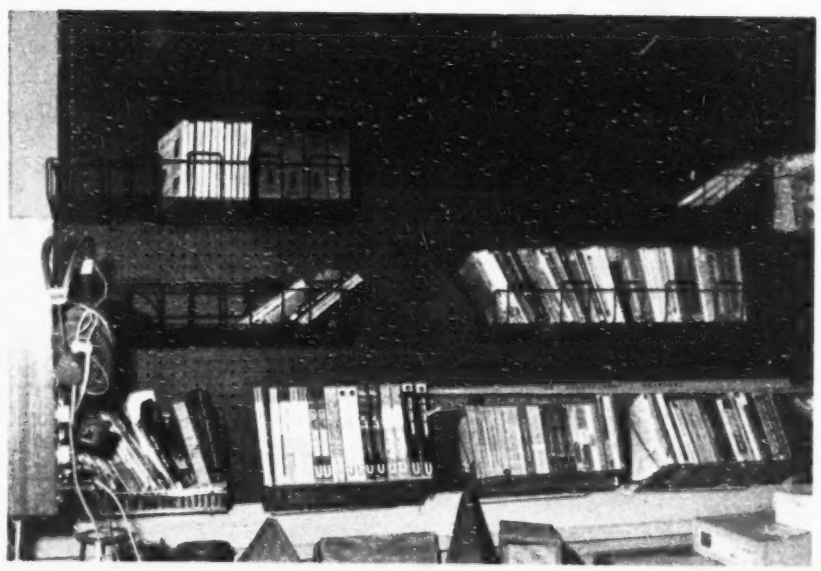
8. Special Materials --- There is an almost unending array of special curricular materials which have been developed or adapted to school use. Indeed, probably a major characteristic of the use of materials was that wholesale acceptance was not apparent. In other words, each school adapted or developed material to fit the need and situation.

Special Materials



Wide use of teacher used materials can be seen in this elementary classroom in Laurens, New York.

A mathematics teacher in Meeker, Colorado, uses a peg-board with wire racks to more readily make available "paperbacks" in mathematics.



A Meridian, Texas, elementary teacher explains a science problem to a group of students, using special material she prepared.

ILLUSTRATION #8

Commercial equipment and materials ranged from excellent closed-circuit television systems at Nova High School to wide use of tape recorders in rooms at Meeker, Colorado. Commercially prepared materials to individualize instruction, such as SRA and programed texts, were found in many schools. Materials adapted and developed by teachers were found in all systems. Considerable effort in the preparation of the materials was concentrated in specific subject areas through workshops held for teachers in project schools. This material ranged from projection screens made for each classroom from painted and framed construction board at Collbran, Colorado, portable stands for recorders and projection equipment at Meeker, Colorado, to carrels made by constructing partitions on large tables at Mesquite, Nevada.

Materials prepared for classrooms by teachers received a major stimulus through workshops. Particularly notable were the materials prepared through the CAP and the WSSSP. The materials included a great number of programs that individualized various programs, units prepared for team teaching, supplementary material lists for student use, and lists of special materials for improving the learning of the students.

The use of these special materials seemed to be tangible evidence of a teacher's search for improved methods of teaching. Teachers in project schools were given added support through the use of summer and regional workshops. Financial assistance to the teachers in preparing materials seemed to encourage teachers to try new methods and different content.

9. In-Service Training — With the rapidly expanding curricular programs and available materials, continual in-service programs are essential for teachers.

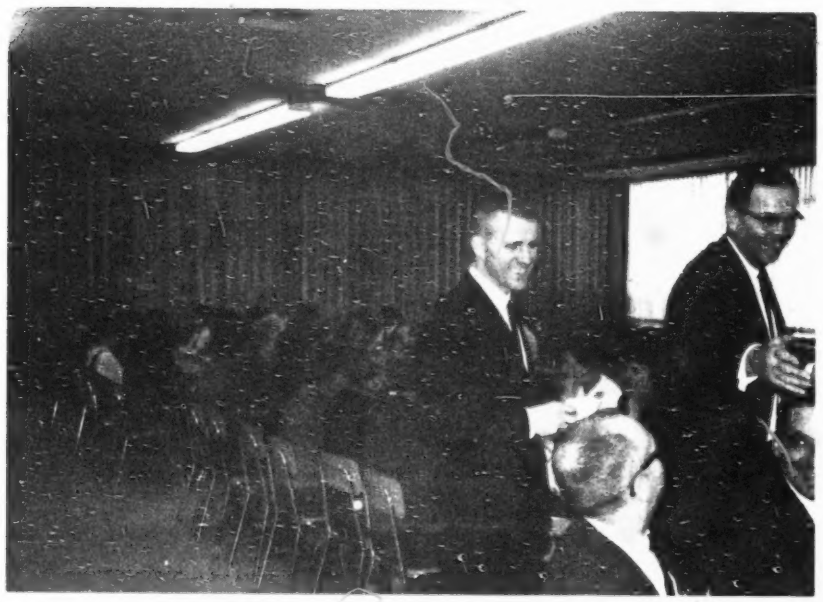
Workshops held for project teachers differed from many workshops in that they were aimed at practical assistance, were usually managed and controlled by teachers, and enlisted the assistance of other teachers as special workers. Specialists were present as consultants, and their services were used in responding to specific inquiries, plus briefing teachers on new programs and materials.

Active interest in in-service programs was evident in all visited projects and schools. Programs ranged from a series of orientation meetings for new faculty entering a school system to monthly regional meetings and special summer workshops. No uniform organizational pattern was evident; in-service programs were, as they should be, tailored to fit the needs of a particular staff in becoming informed and learning to implement new instructional programs.

10. Non-Grading Procedures — A surprising number of schools were attempting to vary the conventional administrative organizational patterns (non-grade) within the school system. Again, wide ranges of activities were found. One elementary teacher in Texas said, "individualizing instruction is what every good teacher has tried to do for some time." Non-grading appeared in the form of several English classes (grades 10-12) held in the same room with a number of teachers and aides, with each student's program individualized

In-Service Training

A discussion group of teachers in the regional meeting of project teachers, meeting at Brenham, Texas.



A group of project teachers in the CASSC, New York, during an after-school and dinner meeting.

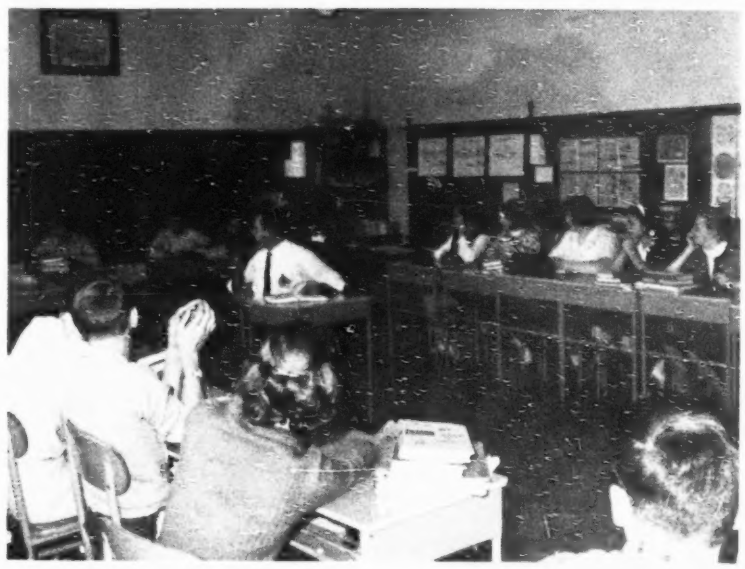
A guidance specialist participating in the shared services program in New York, explains her role to visiting educators.

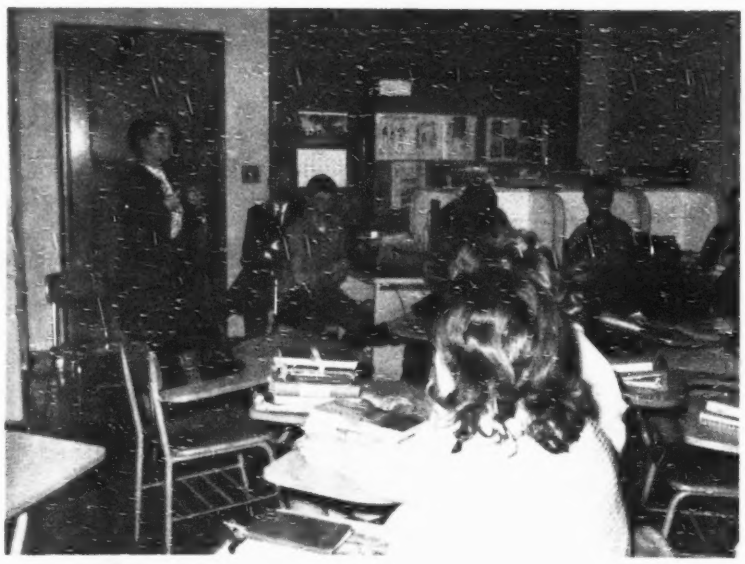
Non-Grading

A Downsville, New York elementary art class encompassing grades 3 and 4.

A non-graded primary group in Korpela, Texas.

A teacher in Schenevus, New York, leading an active discussion group.





A foreign language class in Franklin, New York, that includes students at several levels of skill in Spanish.

ILLUSTRATION #10

through the use of commercially and teacher-prepared materials. It was found in classrooms where a group of elementary students followed in their books while listening to a tape recording of the story being read; other students worked individually or in small groups in the same subject area.

The visitors noticed no attempts to "non-grade" an entire school. Rather, attempts to use this technique were centered in specific subject areas — more often in language arts, social studies, and mathematics. Almost every subject area, however, was represented in some school visited.

Generally, those schools using a large number of levels for grouping students did not mistake this for non-grading, although this rather common error was stated in a few instances. It seemed to the visitors that nomenclature often got in the way of trying new teaching techniques. The inability by leaders to agree on a definition for a popular new term acted as a deterrent to change.

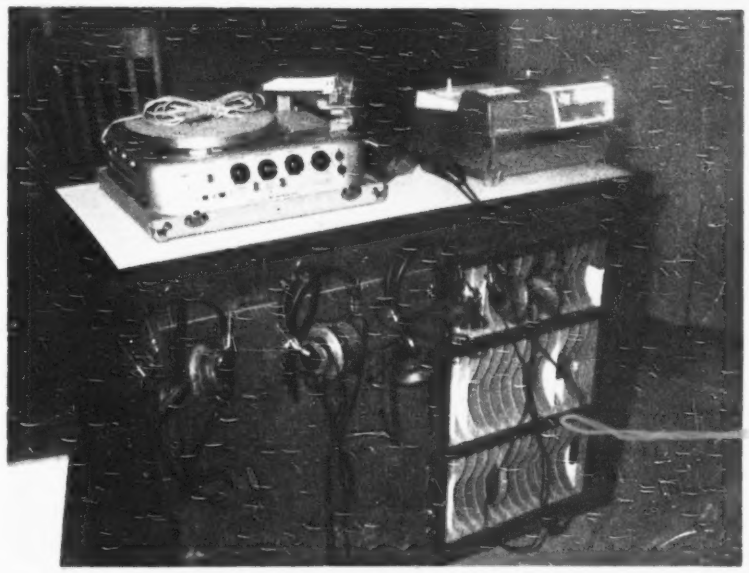
11. Technological Developments — An awe-inspiring, almost overwhelming selection of equipment is available to the teachers, and visited schools had obtained a collection that was uniquely suited for their particular programs. Use of the amplified telephone in the Rocky Mountain Area Project was initiated by Frank Anderson. New York has nine schools connected via amplified telephone that permits any one or all schools to participate in guest lecture presentations and exchange of teachers. Meeker, Colorado probably had more tape recorders per student than any other school visited.

Technological Developments

Second graders in Colburne, Colorado, taking a spelling test via a tape recorder using a teacher-prepared tape.

The switchboard that helps the secretary coordinate a 9-school hook-up in New York using the amplified telephone. This is located at the County Superintendent's office.

The control room of the closed circuit ETV in Evanston, Illinois.



The portable table built by the school carpenter in Meeker, Colorado, to assist teachers in using recorders and storing tapes.

Equipment for making transparencies was found in most schools, plus a number of overhead and other projectors. Laminating equipment and duplicating facilities were not only found in offices of schools visited, but more significantly, they were usually found in teacher's rooms where they could be used readily and easily. Projection equipment was found in libraries, and also in spare classrooms (described in some instances as "resource centers") where both students and teachers had access to them.

None of the schools thought they had enough equipment. All visited teachers could name additional equipment they needed, and all seemed to have such active interest in teaching they could give many suggestions for using or improving the use of the equipment.

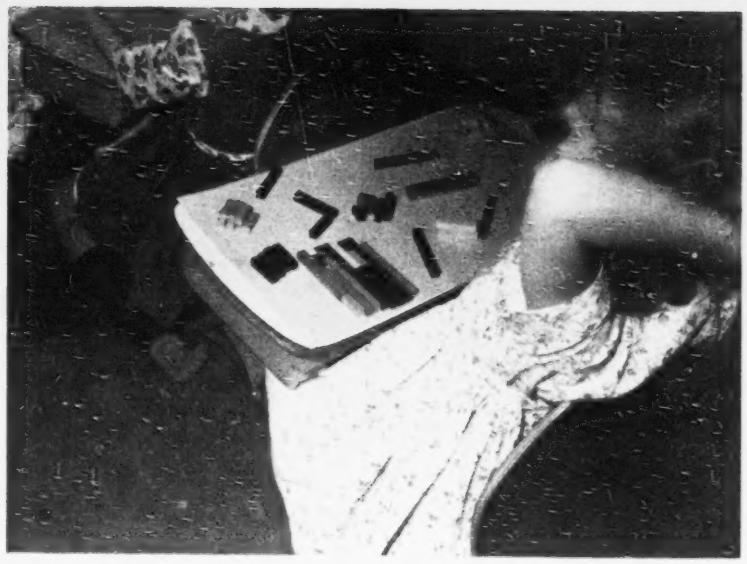
Becoming familiar with available equipment and its wise use seemed a problem to teachers. Workshops and in-service programs were the most popular source of information, although it was noticed that a consultant working with individual teachers was sometimes necessary.

An important point noticed was that equipment was usually purchased after the program had been determined, and not as a beginning point. Considerable attention was given by teachers to the selection of the equipment. The superintendent's role seemed one of introducing the teachers to available equipment — the final choice was left to the teacher.

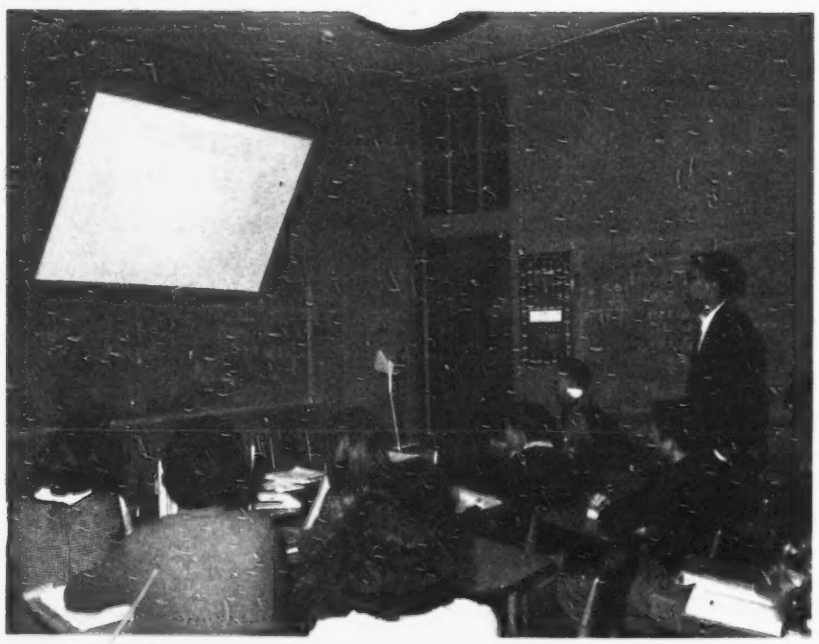
12. Curricular Changes — Very few school-wide or project-wide curricular changes were noted; indeed, the majority of changes fell within the

Curricular Changes

Supplementary materials designed to individualize instruction, in Meeker, Colorado.



New curricular programs in mathematics require use of new materials as illustrated above in use in Meeker, Colorado.



Curricular changes developed by teachers required new materials and new methods of presenting, as shown in Kopperal, Texas.

province of an individual teacher. Teachers seemed to concentrate their revisions to certain areas. Language arts and social studies were found most often to include attempts at improvement than other areas, although attempts were apparent in almost every area.

Curricular revisions made by teachers fell into patterns of prepared outlines, bibliographies, supplementary materials for student enrichment, and materials that were an approach toward individualizing the student's program. An amalgamation of available programs from various curricular groups and material prepared by teachers was apparent in many schools. Although considerable encouragement was given to teachers who prepared their own material, recognition of the limited amount of time available for such additional preparation was also given. Teachers leaned heavily on workshops to assist them in preparing materials. Even though individualization of the curricular program has been a heavy drain on teacher energy, their interest has motivated them to devote the extra time required.

A major advantage of small schools was shown in the informal organizational pattern that was used for evaluating the curriculum. Frequent informal contacts made communication simple — lack of specialists and necessary time made major changes difficult. Larger school systems had more highly structured organizational patterns to improve communication and assist in the evaluation of the curricular program. In addition, specialists, supplementary material, and secretarial assistance were present. In summary, small schools probably were trying harder than larger schools to change their

curricular programs. In the smaller schools, changes were more likely to be found in an individual teacher's program, which in many cases constituted all of the courses offered in a particular teaching field.

IMPLICATIONS FOR CHANGE — III

Reactions to Present Programs

Almost any attempt to improve the educational opportunities of children is to be commended. Concerned teachers have always sought new ways to teach; the extreme interest and involvement in the business of education by lay groups, industries, school patrons and general well-wishers has made the work of the teacher more exacting, more difficult, and more rewarding.

The adage that "the rich get richer" seems also to apply to school systems. Very large school systems were able to offer very attractive salaries to leaders that would assist teachers to improve their programs in many ways; small schools tried to improve their programs while teachers taught a full load and the school system tried to find consultants that would offer their services for no charge. One large school that was visited has hired a commercial artist to assist teachers in preparing transparencies; a small school showed the visitors how exposed X-ray plates could be used to make transparencies by drawing with felt pens.

Large school systems are strong enough in most areas to attempt improvements without banding together; small schools find strength, support, encouragement, and some financial help by forming cooperative groups. It was the concensus of the visitors that the visited projects serve a need that could not be met within the existing limited financial resources. The projects

also presented a stronger position to the accrediting agencies when they attempted to vary current requirements in their states. Of special benefit was the morale factor apparent among staffs of project schools; their identification with a progressive, forward-moving school system was heard repeatedly from teachers who almost glowed as they showed the changes they were exploring, from administrators when they talked about a lower per cent of turn over each year, and by state department officials when they talked about the assistance projects gave to encouraging reorganization of districts when feasible.

Some shortcomings are always present in a series of programs involving as many schools as the three major projects include. There seemed to be little agreement on whether limited or unlimited membership was best, whether specific areas or any applicable area to a school should be explored. Usual difficulties resulting in the turnover of key personnel was present, as were some differences of purpose as described by different staff members and administrators. In other words, much of the change seen was not the result of systematic planned curricular change. Many teachers, however, spontaneously initiated well planned projects.

Most difficulties identified by the visiting teams seemed to be relatively minor, of no greater or lesser seriousness than is found in almost any school system. When measured against the stated goals of the projects — i.e., for the improvement of instruction, there was no doubt that the project schools were making a contribution to that end. The absence of evaluative

instruments and supporting data for the techniques employed caused some hesitancy for support; on the other hand, one teacher said "I don't have data to indicate my students are learning more, but if they and I are enjoying the class and motivation is so high, wouldn't you guess that this is a better program than we had"?

One strength of the projects was the individualizing of the program for a school as well as for students. Flexibility among and within schools was always present; directors and workers in the projects acted as guides and sources of information.

Another strength was the in-service program that is possible through a project approach. Teachers from a variety of schools with a number of ideas can communicate, exchange ideas, and find assistance that a single school cannot duplicate. The camaraderie of the groups, the excitement of searching new ways without fear or threat was present.

The methods of financing programs varied; no system or project seemed to have enough financial resources, and an ever present aura of ingenuity was found. To a point this is probably good, but for teachers to "make do," to salvage, and patch takes valuable time when a teacher could better be looking for ideas — not first-aid treatments.

Applications to the Upper Midwest

The following recommendations for the Upper Midwest are drawn from all the visits, and constitute a plan of action that, in the opinion of the

visiting teams, would be most successful:

1. The regional concept of project organization similar to that employed by the TSSP, which encourages rather frequent teacher-involved workshops, should be used.
2. Leadership through a central method of organization with financial assistance, similar to that found in New York, seems particularly valuable. Possibilities exist for establishment of regional cooperative boards to develop financing of shared services and cooperative buying.
3. Schools and/or regions should concentrate in certain areas of concern, such as found in the WSSSP. If scheduling seems to be a major bottleneck, concentrated effort by member schools could make a more rapid solution possible.
4. Sound financing and organization is imperative. The involvement of member schools that includes financial and time outlay is psychologically sound, such as employed by the TSSP. The limited financial resources of the Upper Midwest extends the time before which significant changes can be made; often changes in small schools come after new developments have been identified by other districts. This process keeps the smaller schools one step behind other schools. Supplementary financial assistance, therefore, is necessary to

speed up the process of change. The assistance is needed in in-service education of both teachers and administrators. Communication is an integral part of the in-service program; change is a continuing process, not limited to summer and regional workshops. Methods should be employed by which a continual flow of ideas and reactions is moving among member schools.

5. Membership in such projects should be somewhat limited. If concern is expressed for the improvement of education, some children cannot be excluded merely because their school is not able to be a member of the project. Conversely, too many member schools retards development and communication. A compromise must be reached between unlimited memberships and severe restrictions that will permit more energy and effort to be placed in schools that can truly become pilot schools.

6. From the experiences obtained through the visits, the essential importance of the state department can be seen. Leadership in the State Department of Education is necessary if effective experimentation is to take place in improving the curriculum of the small schools.

Implications for the Improvement of Education in the United States

All educators agree that the success of the instructional program depends upon the teacher. A multitude of specialists and administrators advise the teacher; a variety of industries and suppliers assist the teacher by providing materials for his use in the instructional program. On the shoulders of the teacher, however, falls the responsibilities of selecting content and materials. This is an impossible job to do by himself — a difficult job to do even with assistance.

To the visiting teams, the most successful method of assisting teachers in the improvement of instruction is the in-service programs being employed across the country. These programs could be described as active, teacher-oriented and very practical. Often conducted by teachers, a major characteristic seemed to be the short route that was found from theory to practice. Teachers were able to leave the meetings with material they assisted in preparing, and could use the material in their classrooms. They also were able to report to other teachers the success or failure of the prepared materials.

A quick way must be found to get new ideas developed, evaluated, and into the classroom. Nationally, it would be well to explore more efficient methods of communication between the developers and the appliers of methods of instruction and materials. A series of work sessions for teachers, plus opportunities to evaluate their work, should be developed that would facilitate

communication. Increased use of communication equipment could assist in the national exchange of information.

Continued support and encouragement of projects such as those visited should be continued. Improvements found in these visited schools often went beyond the initial hope of the projects during their infancies; influences of the changes spread through articles written by participants, and reports done by graduate students and carried to all parts of the country by visiting educators. The visiting teams were repeatedly impressed by the excitement and enthusiasm exhibited by project teachers and patrons of project schools. Supplementary financial support to the projects facilitated the development and availability of materials and contributed markedly to the moving of developed ideas to other schools. Projects which received financial assistance from the Fund for the Advancement of Education were able to experiment in a variety of methods and materials. This did not appear to be evident to the same degree in the state supported project. This does not, however, reflect upon the quality of improvement evident in all projects.

APPENDIX A — SCHOOLS VISITED

School	Administrator
Colorado	
Collbran	R. L. Kinney
Idaho Springs	Robert Metzler
LaVeta	Edward Hildebrand
Meeker	Robert King
Florida	
Ft. Lauderdale, Nova High	Stuart Synnestvedt
Illinois	
Evanston	Lloyd Michael
Rich Township	Robert L. Miller
University Laboratory School	Roald F. Campbell
Minnesota	
Minnetonka	Eino Kiskiner
White Bear Lake	Theodore R. Mason
Missouri	
St. Louis, Valley Winds	Charles Mansfield
Nevada	
Mesquite	Blaine W. Allan
New York	
Downsville	Edwin Tillapaugh
Franklin	Herbert Arnold
Grand Gorge	John Sliter
Laurens	Reginald Kierstead
Roxbury	Vincent Giliberti
Sputh Kortright	Melvin Carpenter
Treadwell	Robert Lynch
Walton	Thomas O'Neil

School	Administrator
Texas	
Burton	Oscar Benhold
Calvert	H. S. Pearson
Cold Springs	M. C. Jones
Coolidge	G. W. Haggard
Iola	T. T. Isbell
Iredell	Ralph Bradley
Kopperl	G. T. Day
Meridian	Walter B. Parks
Milford	James Klem
Morgan	Clayton West
New Waverly	Fred Arneson
Rio Vista	H. W. Slaughter
Walnut Springs	D. E. Edwards
Willis	C. C. Hardy
Utah	
Bryce Canyon	Carrey Nelson
Panguitch	Cliff LaFevre
Wisconsin	
Koehler	Harold Paukert

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